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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE THREE HUNDRED AND FORTY-FOURTH MEETING

Held at Headquarters, New York,
on Monday, 11 June 1990, at 10.30 a.m.

Chairman: Mr. JANKOWITSCH (Austria)

- Report of the Scientific and Technical Sub-Committee on the work of its twenty-seventh session
- Implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space
- Organization of work

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The meeting was called to order at 10.50 a.m.

REPORT OF THE SCIENTIFIC AND TECHNICAL SUB-COMMITTEE ON THE WORK OF ITS TWENTY-SEVENTH SESSION (A/AC.105/456)

IMPLEMENTATION OF THE RECOMMENDATIONS OF THE SECOND UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

The CHAIRMAN: Before calling upon the first speaker, I should like to inform the Committee that at the end of this morning's meeting we shall hear a presentation from the United States of America by Mr. Russell Koffler of the United States National Oceanic and Atmospheric Administration on the development of satellite meteorology, in commemoration of the thirtieth anniversary of the launching of the first meteorological satellite by the United States in 1960.

Mr. ZLAUVINEN (Argentina)(interpretation from Spanish): I should like to make some comments on agenda items 5 and 7, which relate to the report of the Scientific and Technical Sub-Committee and the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82).

The main intention of the Argentine Republic in all the activities relating to outer space is to preserve the exclusively peaceful nature of the use of outer space, to develop research and to promote international co-operation.

That is why my delegation attaches a particular interest to the work of the Scientific and Technical Sub-Committee, for we feel that it has the responsibility to play a very important role in the search for the attainment of those objectives.

At its last session the Scientific and Technical Sub-Committee continued to make progress in its substantive work. Unequal progress was made in the consideration of its various items, and in some cases, such as the item on implementation of the recommendations of UNISPACE 82, that progress did not meet the hopes of many of its members.

(Mr. Zlauvinen, Argentina)

UNISPACE 82 represented an important milestone in space activities, and in the activities of the Committee on the Peaceful Uses of Outer Space in particular. The promotion, organization and successful implementation of such a Conference called for a vast effort at every level, and we believe that that must not be forgotten.

We believe, therefore, that it is incumbent upon all of us to try to implement the Conference's recommendations in order to increase and encourage international co-operation in this area and to afford the developing countries greater opportunities to derive an effective advantage from the benefits of space progress.

My delegation feels it is necessary to make greater efforts to implement the recommendations of UNISPACE 82. In order to achieve that, there is a need for additional resources, for special programmes and fellowships, for technical co-operation and, primarily, for an extensive transfer of technology that is non-discriminatory and carried out on equitable bases.

The United Nations Programme of Space Applications has excellent human resources and represents a potential source of development for countries with fewer resources that are less developed in terms of space technology. However, we believe that the meagre financial resources available to the Programme prevent it, in practice, from fulfilling its specific functions. My delegation therefore agrees that those resources should be increased in order to ensure that the Programme can attain its objectives.

In addition, my delegation is very concerned at the increase in trends and policies aimed at restricting and even preventing the transfer of technology and equipment related to space activities. We believe that that runs counter to the concept of co-operation and, basically, to the very spirit of the UNISPACE 82 recommendations.

(Mr. Zlauvinen, Argentina)

In that connection we hope that the work of the Scientific and Technical Sub-Committee in the coming year will help to find appropriate means to reverse that trend and, in the long run, to define the appropriate machinery to ensure the genuine implementation of the UNISPACE 82 recommendations.

Nevertheless, we must acknowledge the fact that the balance of the work of the Scientific and Technical Sub-Committee on other issues was more positive - for example with regard to the utilization of nuclear power sources in outer space.

In that connection we feel that the contribution of the Working Group responsible for dealing with that issue has been very significant, and that makes us optimistic about the results of its work.

Argentina firmly supports the continuation of technical studies within the framework of the Sub-Committee to define the safest possible measures, because only in that way can all countries be guaranteed that such nuclear power sources are used in a trustworthy manner.

With the continuation of that positive trend we feel that the Committee will in the near future be in possession of the technical foundation it needs to define the legal principles relating to this question.

Mr. CHANDRASEKHAR (India): The Indian delegation wishes to take this opportunity to make a few brief remarks on the work of the Scientific and Technical Sub-Committee at its twenty-seventh session and on the agenda item relating to the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82).

Looking at the work of the last session of the Scientific and Technical Sub-Committee the Indian delegation is pleased to note the progress achieved at that session. The most important achievement, of course, is the reaching of consensus on a comprehensive set of guidelines and criteria for the safe use of nuclear power sources in outer space.

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(Mr. Chandrasekhar, India)

We wish to commend Professor John Carver for his able leadership as Chairman of the Working Group on nuclear power sources. The Working Group's consensus facilitated agreement by the Legal Sub-Committee on draft principle 3 relating to the subject. We note that this constitutes the most important part of the principles related to the safe use of nuclear power sources, with a bearing on scientific and technical matters. However, there are still principles that have yet to be agreed upon in the Legal Sub-Committee on this important subject, and hence we are of the view that the Scientific and Technical Sub-Committee, at its next session, should focus on any of those scientific aspects that are crucial for finalizing the other principles soon.

We note also that the Scientific and Technical Sub-Committee's Working Group on nuclear power sources has been considering studies and analyses relating to the collision of space objects carrying nuclear power sources along with the question of space debris and several other issues relating to this subject. Considering that the Sub-Committee's Working Group on nuclear power sources has done a commendable job, it would be a good idea for our Committee to consider reconvening it to deal with such outstanding questions. Also, there is a need to encourage further consultations on the question of elaborating recommendations concerning the organization and conduct of operations for location, retrieval and relief in case of accidental re-entry of nuclear power sources into the Earth's atmosphere.

During its last session the Scientific and Technical Sub-Committee considered a large number of agenda items. In spite of the pressing lack of time, we feel the Sub-Committee did a commendable job in handling those items and that it discussed various substantive issues. There were several interesting and informative presentations on subjects relating to the agenda items, particularly on the

(Mr. Chandrasekhar, India)

geosphere-biosphere programme, space astronomy, planetary exploration and remote sensing, and on the special theme, namely "The use of space technology in terrestrial search and rescue and in disaster relief activities". We thank the Committee on Space Research (COSPAR) and the International Astronautics Federation (IAF) for organizing a symposium on the special theme.

While we feel that this scientific and technical rigour and focus should be maintained by the Sub-Committee, we also share the view that this should be subservient to the main purpose of the Committee, namely the promotion of international co-operation in the peaceful uses of outer space. This has to be achieved by providing sufficient time for considering substantive issues, for exploring avenues for promoting international co-operation and for identifying the impediments in the process and seeking common solutions for overcoming them.

There is also a continuing need for assessment of technological developments and their implications for international co-operation. The Committee and its Sub-Committees have a special role to play in the orchestration of necessary assistance and support for developing countries for the exploration and utilization of space for their benefit. While the exchange of information to assist identification of new opportunities for international co-operation needs to be continued, we would also like to see the Sub-Committee give attention to the rapid implementation of a space information service to assist a large number of countries.

We are pleased that the Sub-Committee considered several activities in the context of International Space Year, to be celebrated in 1992. While we support those proposed activities, we urge the United Nations actively to work for and encourage participation by a large number of countries yet to receive the full benefits of space technology.

(Mr. Chandrasekhar, India)

Our delegation notes with satisfaction several initiatives taken in the context of International Space Year by Member States and international organizations. Our delegation is hopeful that those efforts will have a significant impact in promoting beneficial applications of space technology in developing nations. In that context it is necessary that the Scientific and Technical Sub-Committee be requested to organize an assessment of the impact of International Space Year programmes on developing nations. Such an assessment, carried out expeditiously, could possibly make it possible to arrive at suggestions and recommendations for the further orientation of International Space Year efforts towards the needs of developing nations. That is also particularly relevant since International Space Year coincides with the tenth anniversary of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82)

We are also pleased to note that the Sub-Committee discussed at some length the question of the environments of space and the Earth in accordance with paragraph 22 of General Assembly resolution 44/46, which called for more attention to be paid to all aspects relating to the protection and preservation of the outer space environment, particularly those aspects potentially affecting the Earth's environment. We feel that this is an important subject. There is an urgent need to encourage studies by a number of countries, and if possible by a group of member countries, on the status, issues and possible co-operative projects relating to the study of the space environment and space debris. Necessary international co-operation needs to be mounted for compilation of and access to data on space debris and for the monitoring of the space debris environment. The protection and preservation of the outer space environment is essential to maintain the Earth's environment, as well as for the conduct of space activities by all nations for

(Mr. Chandrasekhar, India)

peaceful and beneficial applications. We hope our Committee, during the current session, will give more attention to the way in which the Scientific and Technical Sub-Committee can deal with this subject.

All spacefaring nations are giving considerable importance to International Space Year in the context of the spectacular achievements in the exploration and utilization of outer space. All mankind is indebted to the major spacefaring nations for bringing about significant advances and in modernizing the world. Is it not time that those nations took initiatives for protecting the outer space environment, in particular from the problem of space debris? Such an initiative on their part would be another significant contribution to the exploration and utilization of outer space. It would be befitting to initiate discussions on the matter of space debris in the context of International Space Year as well. Our delegation feels and strongly advocates that various international issues, including those relating to international co-operation on the subject of space debris, be considered by the Scientific and Technical Sub-Committee through inclusion of the item on its agenda, in addition to the various recommended national studies.

Looking forward to the next session of the Sub-Committee, our delegation supports the special theme chosen for the attention of Sub-Committee at its twenty-eighth session, namely "Applications of airborne and satellite remote sensing for prospecting mineral and ground-water resources and for monitoring and managing biological resources, with emphasis on agriculture, taking into particular account the needs of developing countries". We are sure that theme is of particular interest to a large number of countries.

While discussing in the Sub-Committee activities relating to the international geosphere-biosphere programme, it is necessary particularly to highlight those

(Mr. Chandrasekhar, India)

specific scientific activities in which developing nations can play a meaningful role. The Outer Space Affairs Division could arrange for training and support for developing nations in such identified scientific activities.

We take this opportunity to commend the substantial contributions made over the past 30 years by United States weather satellites towards the understanding and conservation of Earth's environment, as well as towards promoting international co-operation in this area. Initiatives such as Mission Peace and Almaz have the potential to promote further international co-operation in the area.

Turning now to the question of implementation of the recommendations of UNISPACE 82, we commend the work carried out by the Working Group of the Whole convened during the twenty-seventh session of the Scientific and Technical Sub-Committee. The Working Group's report sets out a number of actions which reflect the priority needs of developing countries. We recall that the Group of 77 carried out commendable work to assist the Working Group. It is essential that the Committee consider the implementation of the Working Group's recommendations on an urgent basis. We also support reconvening the Working Group for the next session.

We are happy to say that India is actively working to support a United Nations workshop on basic space sciences for the benefit of developing countries during 1991. That will be one of the initiatives India will be taking for International Space Year. We note that this subject will be of special relevance for the promotion of space activities and the development of indigenous talent in developing countries, as borne out by our own experience.

(Mr. Chandrasekhar, India)

We should also like to take this opportunity to express our appreciation for the work done by the Chief of the Outer Space Affairs Division, Mr. Jasentuliyana, and Mr. Abiodun and their team in relation to the implementation of the United Nations Space Applications Programme in the face of severe resource constraints. We support the proposed programme of space applications as contained in document A/AC.105/446, submitted to the Scientific and Technical Sub-Committee.

While that programme is to take due cognizance of the recommendations of this Committee's Scientific and Technical Sub-Committee, it should place emphasis on the cost-effectiveness of the use of space applications, particularly in the area of remote sensing, which should be highlighted and clearly brought out in all its activities, be it training, education, conferences, workshops, symposia or exhibitions. This is an important element in the promotion of space applications in developing nations.

We should also like particularly to commend the initiatives proposed for regional and inter-regional mechanisms of co-operation set forth in the report of the Scientific and Technical Sub-Committee.

Mr. BOYER (France) (interpretation from French): On agenda item 5, we should like to emphasize our appreciation of the outstanding atmosphere that has prevailed in our work this year on nuclear power sources, which has made possible the consensus formulation of recommendations on technical criteria for the safe use of nuclear power sources in outer space.

We welcome the synergy in the work of the two Sub-Committees since it is on the basis of the results that the Legal Sub-Committee was in turn, a month later, able to adopt by consensus a very important principle: principle 3, on guidelines and criteria for safe use of nuclear power sources.

(Mr. Boyer, France)

Nevertheless the French delegation would note that the Legal Sub-Commttee is still working on two technical principles: principle 2, on notification of the presence on board a space object of a nuclear power source, and principle 4, on safety assessment before a launch is authorized. No doubt the Legal Sub-Committee will profit from support from the Scientific and Technical Sub-Committee on these points. Under the circumstances, we would state our preference to have the Working Group on Nuclear Power Sources convened again in 1991.

We note from the report of the Scientific and Technical Sub-Committee dated 12 March 1990 that that Sub-Committee has not take a stand on this issue, leaving it to this Committee to take a decision on the question of nuclear power sources in the light of the work of the Legal Sub-Committee this year.

On the important question of debris, the French delegation emphasizes that it shares, for the same reasons as those put forward, the opinion expressed by the United States delegation in its recent statement.

Mr. MIKULKA (Czechoslovakia) (interpretation from French): After all the outstanding statements we have heard here concerning the report of the Scientific and Technical Sub-Committee, it is difficult to add anything. That is why I would merely refer to all the positive comments that have been made on the work of the Scientific and Technical Sub-Committee at its last session.

At the same time I should like to associate myself with all those speakers who have expressed appreciation to its Chairman, Mr. John Carver, who so expertly guided the Sub-Committee's work.

During the general exchange of views, the Head of the Czech delegation has already mentioned the important contribution made by the Scientific and Technical Sub-Committee, and particularly its Working Group on Nuclear Power Sources, to the Legal Sub-Committee on nuclear power sources.

(Mr. Mikulka, Czechoslovakia)

I am speaking today to mention another problem concerning the work of the Scientific and Technical Sub-Committee, a problem to which my Government attaches particular importance: the question of space debris, which has been raised by many delegations here. Like many other speakers here, my delegation welcomes the fact that the question of space debris attracted the attention of the Scientific and Technical Sub-Committee at its last session. I would also take this opportunity to express my delegation's great appreciation of the studies on the question of space debris recently carried out by the European Space Agency, the National Security Council of the United States and the International Astronautical Federation. I refer to document A/AC.105/420.

I should like to assure the Committee that we are ready fully to support the Sub-Committee's work on space debris should it decide to include that subject on its agenda, as has been proposed by several delegations.

Mr. AHMAD (Pakistan): Before commenting upon the subject-matter of agenda items 5 and 7, now under consideration, my delegation would like to express its appreciation for the able support extended to the Scientific and Technical Sub-Committee by the Outer Space Affairs Division of the Secetariat, led by Mr. Jasentuliyana, who, despite budgetary and manpower restraints, has done a commendable job.

These remarks also apply to the team of the United Nations Expert on Space Applications, Mr. Abiodun, who with distinction has registered further improvements in the Programme, which, in view of the financial circumstances available to him, is a remarkable achievement.

As we all know, there is much to be desired in the improvement of the pace of work in the implementation of the recommendations of UNSPACE-82. A sizable number of delegations present here, and my delegation is one of them, feel greatly

(Mr. Ahmad, Pakistan)

disturbed due to the slow pace of progress in this area. While voicing our disappointment in that regard, my delegation would like to appeal to all delegations to muster greater support, including voluntary financial contributions, to the space applications programme, which constitutes an important component of the recommendations of UNISPACE 82.

(Mr. Ahmad, Pakistan)

My delegation fully recognizes and appreciates the efforts made by the representative of Chile, Mr. Raimundo Gonzalez, as Chairman of the Working Group of the Whole, to evaluate the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), and looks forward to the fulfilment of the Working Group's common desire to achieve a satisfactory result as soon as possible.

With regard to the future work of the Scientific and Technical Sub-Committee, my delegation would like to see the Committee take decisions on the following matters. In spite of the commendable progress made on the matter of the use of nuclear power sources (NPS) in outer space, we should like the Working Group on NPS to reconvene next year to facilitate the task of the Legal Sub-Committee to complete the remaining work in this area.

The Scientific and Technical Sub-Committee should focus on the COSPAS-SARSAT programme to encourage wider participation by member States, in order to achieve the maximum humanitarian benefit from the programme.

My delegation is aware that the Scientific and Technical Sub-Committee has already recommended a large number of topics for the agenda for its next session, as a result of which it may find it difficult to focus on additional areas. None the less, the subject of space debris deserves particular attention, and if possible it should be put on the Sub-Committee's agenda as a specific item and assigned a relatively high priority.

Mr. POCAR (Italy): Since this is the first time the Italian delegation has spoken during this session of the Committee, allow me, Sir, to express our deep satisfaction at seeing you once again in the Chair and to assure you of our full co-operation and support in your task. We wish also to express our appreciation of your very comprehensive introductory statement, which in our view constitutes excellent guidance for the fruitful outcome of our deliberations.

(Mr. Pocar, Italy)

Commenting on the activity of the Scientific and Technical Sub-Committee, we note with pleasure the satisfactory work it has carried out on the important issues before it for consideration, particularly on the items relating to the United Nations Programme on Space Applications and to implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82). Italy has always attached the greatest value to the Programme and has given it its best support. In this context, I recall the role played by Italy as co-sponsor in the organization of international training courses on remote sensing applications held, or to be held, in Italy, which have already been mentioned by the United Nations Expert on Space Applications, to whom we extend our appreciation for his outstanding report. We look forward to continuing to give our active support to the Programme in the future.

Among the various important issues considered by the Scientific and Technical Sub-Committee, the use of nuclear power sources (NPS) in outer space has certainly deserved high priority. We are particularly pleased to note that the consideration of this item in the Sub-Committee has been especially fruitful this year. The agreement reached on scientific and technical criteria for the safe use of NPS in outer space represents a very significant achievement in this area and at the same time an essential step in the elaboration of a set of principles in the Legal Sub-Committee. We are fully confident that the co-operation shown by all the delegations represented in the Scientific and Technical Sub-Committee will continue and allow a quick and positive solution of any remaining problem, in order to reach a decision on this urgent matter as soon as possible.

(Mr. Pocar, Italy)

The significant goals achieved by the Scientific and Technical Sub-Committee on nuclear power sources in outer space lead me to refer briefly to another issue concerning the Sub-Committee's future work. Like other delegations, we noticed with interest your emphasis, Mr. Chairman, on the problems related to the protection and the preservation of outer space environment, as well as to the challenge created in this context by the phenomenon of space debris. We agree with your comments. The problems arising out of this issue relate to the safe utilization of outer space and to the need to minimize the risks and therefore have some contact with other issues under consideration in our Committee, including the use of nuclear power sources. Consequently, it is in the same perspective that we look forward to having these matters considered within the Scientific and Technical Sub-Committee, in view of its contribution to clarifying them and to promoting international co-operation in this field.

Mr. MACDONELL (Canada): At this time I should like to comment on the report of the Scientific and Technical Sub-Committee.

First, my delegation notes with satisfaction the significant progress made in the consideration of the safe use of nuclear power sources (NPS). The Working Group has considered this topic in the 12 sessions held since 1978. I am sure we share with other delegations satisfaction that this long discussion has produced a significant set of recommendations on the safe use of nuclear power sources in space, adopted by consensus by the Scientific and Technical Sub-Committee.

This major success of the Sub-Committee prompted it to recommend that this Committee consider the question of reconvening the NPS Working Group in the light of the work carried out by the Legal Sub-Committee. We now know that the Legal Sub-Committee successfully translated the consensus recommendation of the Scientific and Technical Sub-Committee into a legal principle, the result being the

(Mr. MacDonell, Canada)

consensus reached on principle 3, "Guidelines and criteria for safe use". In our view, principle 3 depends more than any other on scientific and technical factors; issues associated with the outstanding principles are primarily legal. None the less, pending the completion of the entire set of principles we think it would be advisable to maintain the Working Group.

Turning now to other matters considered by the Scientific and Technical Sub-Committee, our delegation has already noted its satisfaction with the discussion on the theme selected for special attention, the use of space technologies in terrestrial search and rescue and in disaster relief. We support the recommendation contained in paragraph 88 of the Sub-Committee report, that member States and relevant international organizations consider making use of the COSPAS-SARSAT satellite-aided search and rescue system.

We further support the Sub-Committee recommendation that the theme fixed for special attention at the 1991 session be

"Applications of airborne and satellite remote sensing for prospecting mineral and ground-water resources and for monitoring and managing biological resources, with emphasis on agriculture, taking into particular account the needs of developing countries". (A/AC.105/456, para. 105 (q))

(Mr. MacDonell, Canada)

Canada has devoted considerable effort to the development of remote-sensing applications and today applies them for both operational resource management and for research studies. We have also developed unique capabilities in airborne remote sensing, particularly systems using synthetic aperture radar. One example is our sophisticated airborne C-band synthetic aperture radar used to simulate radar imagery from radar satellites now under development, including the European Space Agency's ERS-1, Japan's ERS-1 and Canada's RADARSAT. This aircraft has been used in co-operative programmes with many other countries and can be made available for application development programmes outside Canada. We look forward to contributing to the discussion on the proposed theme fixed for special attention next year.

The Scientific and Technical Sub-Committee has considered for several years the planned International Space Year (ISY). Canada is developing a domestic programme for ISY, and participating in the international development of projects through the Space Agency Forum for International Space Year. We are leaders on a project that we believe addresses many interests and needs of countries around the world. This is the Global Change Encyclopaedia project that will assemble global earth observation data from remote-sensing observations of many countries and present it in an easily accessible form. The system will provide this global information on important themes, such as desertification, vegetation change and the greenhouse effect. The data, provided on computer diskettes or CD-ROM's, together with software to handle and analyse it, will be made available to all interested countries. The system will also provide a basic environmental modelling capacity that will allow it to be useful for many years after 1992. The system will be designed for use on micro-computers to ensure the widest possible distribution. This illustrates another theme of our remote-sensing activities: the development of low cost tools that can make accessible to a wide variety of potential users the benefits of space technology.

(Mr. MacDonell, Canada)

Canada recognizes the importance of implementing the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space. We are committed to international co-operation in space and to working with developing countries to strengthen their capability to use space. We do this both through bilateral activities and through support for the United Nations Programme on Space Applications, most often by making available Canadian experts for United Nations workshops and training courses, such as that held recently in Havana on Space Communications for Development.

Finally, I should like to mention one further example of international co-operation that my delegation believes will help develop a strong basis for future co-operation in space. Later this month, on 23 June, the International Space University (ISU) will begin its 1990 session in Toronto. Canada is proud to host this international co-operative activity, which will provide 125 graduate level students from around the world with a unique educational experience. The students will attend courses taught by a core faculty of 30 experts and more than 70 guest lecturers from around the world. They will also work together on two design projects: one, an international earth observation system to monitor changes in the environment, and the other, an asteroid mining project that will use robots. The students will not only address a wide variety of topics from space architecture to engineering and law but also work together to combine knowledge from all these fields in their projects. This will provide an opportunity for some of the best young minds from around the world, the future leaders of space programmes and space diplomacy, to work and learn together. We are proud to be associated with the United States and France, previous hosts of the ISU, and the Soviet Union and Japan, the countries next scheduled to host this programme. We encourage all members of this Committee to take advantage of the benefits of the ISU.

Mr. SATOH (Japan): I should like to comment briefly on some of the issues relating to the work of the Scientific and Technical Sub-Committee.

With regard to nuclear power sources, we are gratified that consensus has been reached on the question of guidelines and criteria for the safe use of nuclear power sources in outer space, as a result of the dedicated efforts and the spirit of compromise demonstrated by all delegations and experts involved. In this respect, my delegation would like to pay a tribute in particular to the Federal Republic of Germany for its contribution in the preparation of the working paper, which constituted a firm basis on which the consensus in the Working Group on Nuclear Power Sources was attained.

My delegation holds the view that the Sub-Committee should continue to study the remaining scientific aspects of the safe use of nuclear power sources, in view of the fact that the Legal Sub-Committee still needs to work on various draft principles on nuclear power sources in future sessions. Consequently, it believes that nuclear power sources should be retained as a priority agenda item for the next session of the Scientific and Technical Sub-Committee and that the Working Group on Nuclear Power Sources should be reconvened at that session.

Japan believes that space technology can greatly contribute to the protection of the earth's ecology and to the solution of urgent environmental problems. Co-operation and discussion among Member States in the Scientific and Technical Sub-Committee will play an important role towards this end. Accordingly, my delegation welcomes the Sub-Committee's decision to change the title of the agenda item on progress in the geosphere-biosphere programme to include "national and international space activities related to the earth environment".

With respect to the space environment and space debris in particular, my delegation notes that the problem of space debris entails serious potential threats to our future space activities as well as to the space and human environment

Mr. Satoh, Japan)

itself, and that we must eventually address this problem fully in the light of the rapid growth in the amount of debris in outer space. In this regard, my delegation welcomes General Assembly resolution 44/46, which for the first time referred to space debris and, concluding that it is essential that Member States pay more attention to the problem of space debris, called for the continuation of national research. We believe that it is advisable that the information accrued from national research be shared in an exchange of views at future sessions of the Scientific and Technical Sub-Committee.

(Mr. Satoh, Japan)

My delegation supports the idea that when it has finalized its deliberations on nuclear power sources the Sub-Committee should take up and allocate sufficient time for discussion of the problem of space debris. Japan is ready to contribute to the discussions to the best of its ability, and this year my delegation presented a document concerning ongoing national research on space debris.

At the same time, however, my delegation believes that we should be cautious when we discuss the problem, in view of the fact that research on space debris has just started in many countries and there remains a vast range of aspects about which little is known. We must avoid the mistake, to quote an ancient oriental saying, "of ending up killing the bull while trying to perfect the shape of its horns". By this I mean that, if we hasten to act without having sufficient knowledge, we risk the possibility that we will hamper our activities for the exploration and peaceful uses of outer space which hold the promise of tremendous future benefits. Therefore, my delegation believes that at the outset we must start cautiously, concentrating on the study of the diverse aspects of the problem through scientific research and exchange of information.

Mr. DATCU (Romania): Mr. Chairman, on behalf of the Romanian delegation, I take great pleasure in expressing our satisfaction at seeing you presiding once again over the work of our Committee. Your experience and well-known diplomatic abilities will enable us to reach our goals and further to promote scientific co-operation among nations.

The Committee is also strengthened by Australian Professor John H. Carver's chairmanship of the Scientific and Technical Sub-Committee, and by the Legal Sub-Committee working under the Chairmanship of Mr. Vaclav Mikulka of the Czech and Slovak Federal Republic.

(Mr. Datcu, Romania)

I should like to stress some aspects of space-related activities in Romania and to preview our programmes for the near future. Considering the high technological complexity of research and application and the extensive investments required in this field, Romania directed its space activities first to application in the fields of meteorology, remote sensing and satellite communications.

Owing to technological restrictions in Romania in recent years, researchers directed their activities mostly to the theoretical field. The same situation applies to universities and institutes of higher education in engineering, which explains why our theoretical capacity is greater than our technological capacity.

Romanian space research in physics is organized within the framework of our participation in the special scientific projects of the international space programme INTERCOSMOS.

The following results have been obtained recently: the acquisition of basic technological data concerning the single-crystal growth in space by capillarity processes, with experiments in the manned cosmic station SALYUT-6 yielding two patents; cosmic ray heavy ions flux and spectra measurements in space around Earth - Van Allen radiation belt investigations; applications in the suprasonic and cosmic flight biological hazard estimation with experiments on seven satellites of the COSMOS series and manned space stations SALYUT-6 and SALYUT-7; mass-spectrometric studies of the Earth's upper atmosphere; cosmic agents matter interaction experimental determination, with experiments on geophysical rockets and on the manned cosmic station SALYUT-6.

Our current and programmed research is as follows: measurements of the physical paramaters of the very low frequency radio waves in the ionosphere, of the electrostriction and of the parametric instabilities, in the context of the international experiment AKTIVNYI of the INTERCOSMOS programme; infrared spectrometric instrumentation for satellite payload to carry out atmosphere and

(Mr. Datcu, Romania)

litosphere measurements in space, in the context of the remote sensing applications of the international experiments PRIRODA of the INTERCOSMOS programme; flux and spectra measurements for cosmic radiation on Earth satellites, in the context of the international experiments STD on the orbital station Mir; mass spectrometric measurements of neutral and ionized component concentration in the Earth's upper atmosphere, a joint Romanian-Bulgarian-Soviet experiment; magnetometer development and magnetospheric investigations, in the context of the international experiments INTERBOL of the INTERCOSMOS programme.

We have also started a biotechnology research programme.

Remote sensing activity in Romania is carried out by expert institutes in meteorology and hydrology, land reclamation, geology and geophysics, geodesy and cartography and agriculture, assisted by computer hardware and software research laboratories and electronics and civil engineering high schools.

Research and experiments have been carried out in processing techniques and procedures for the data provided by satellite and aircraft in the following fields: assessment and surveillance of water resources in the snow cover; surveillance of surface-water dynamics and quality; the estimation of soil moisture and areas with excessive humidity, salt soils and assessment of water losses owing to irrigation systems; the estimation of the vegetation state of crops and their development.

Meteorological data received from the European meteorological satellite (METEOSAT), the Television and Infrared Observations Satellite/National Oceanic and Atmospheric Administration of the United States TIROS-N/NOAA and METEOR are operationally processed.

A ground station intended for meteorological applications - antenna, receiver and a digital picture processing system - was designed in co-operation with the German Democratic Republic.

(Mr. Datcu, Romania)

Under the United Nations Development Programme (UNDP), activities in geology and geophysics are directed at organizing a full line of apparatus for the processing and interpretation of aerial analogue and digital pictures.

In digital picture processing - an indispensable tool in remote sensing - we have also made progress in hardware, theory and software.

Some digital picture-processing systems, with appropriate high-speed designs, have been developed.

Theory, algorithms and software have been developed for digital two-dimensional filtering, integral transfer, compression and feature extraction, texture analysis and scene classifications.

Because of the informational and technological isolation of our country in the past years, with the exception of satellite meteorology and airborne remote sensing, which are operational, the other remote sensing projects have remained in the research or experimental stages.

LANDSAT images have not been purchased; since they were obtained only sporadically, they could not be operational in real-time applications.

Considering the critical importance of remote sensing in the economic decision-making process of a developing country, we intend to make better use of the theoretical and experimental background and push forward with our programmes with a view to making them operational.

Soon the coherent microwave images in remote-sensing synthetic aperture radar (SAR), which will be obtained by the Earth Resources Satellite (ERS) and RADARSAT programmes, will be of primary importance in evaluating the Earth's natural resources. That is why we are carrying out research in progress in the field of coherent image formation and noise filtering, and plan to start a research programme for coherent radiation matter interaction.

(Mr. Datcu, Romania)

A global ionospheric studies (GIS) development programme, including artificial intelligence elements, is also in progress for large-area applications: agriculture, silviculture, hydrology, cartography, and so forth.

(Mr. Datcu, Romania)

A major programme will be the establishment of a ground station in Romania for remote sensing, direct acquisition and processing of satellite data and a National Remote Sensing Centre. Romania has the experience of the Cheia INTELSAT ground-station operation and the METEOSAT and NOAA meteorological satellite stations.

Romania is a member of INTELSAT and has had access to telecommunications ground stations for some time. Romania recently became a member of EUTELSAT and is in the process of installing a ground station for that communications programme.

The need to improve mobile communications and search-and-rescue services has aroused intensive international interest in developing a system using satellite technology. Romanian specialists are extending the NOAA ground station for the COSPAS-SARSAT Programme and intend to develop radio beacons for that standard, mobile equipament for INMARSAT Standard C and receivers for the NAVSAT-GPS (GLONASS) system.

In the field of co-operation Romanian space-research programmes are developed in co-operation with specialists from the Soviet Union, the Czech and Slovak Federal Republic, the German Democratic Republic, Hungary and Bulgaria within the framework of the INTERCOSMOS, PRIRODA and SOIUZCARTS programmes. Romanian specialists also have contacts with the International Photogrammetry and Remote Sensing Society. Fellowships and research grants have been facilitated by the United Nations Development Programme (UNDP) and the Food and Agriculture Urganization of the United Nations (FAO).

Recently, the European Space Agency (ESA) and the Romanian Commission for Space Activities have established contacts, and there is hope for future enhanced co-operation. In response to developments in Eastern Europe, ESA and INTELSAT

(Mr. Datcu, Romania)

have taken the initiative of organizing an International Conference and Industrial Exhibition in the field of space communications - SATELCOM 90 - at Bucharest from 24 to 26 October of this year.

New vistas are now open to our endeavour to make ampler contacts and broader common efforts to achieve improved performance. We are coming to an understanding of the major importance of scientific and technological joint ventures in providing us with knowledge and skills that are unattainable through individual efforts.

In the perspective of International Space Year 1992, we suggest that UNDP analyse our proposal for the organization in Romania of international training courses in information theory, signal processing and remote sensing.

Mr. NOREEN (Sweden): I should like to return to the question of the future work of the Scientific and Technical Sub-Committee, which that Sub-Committee has requested the Committee to consider at this session. I refer to paragraph 109 of the Sub-Committee's report (A/ACV.105/456).

My own country's views regarding the future work of the Scientific and Technical Sub-Committee are well known, I believe. We would like the Sub-Committee to pay more attention to the growing problem of the outer-space environment, more particularly the question of space debris. In that respect my delegation agrees entirely with what the representative of Japan said only a moment ago, namely, that what the Sub-Committee should do is to concentrate on the study of the diverse aspects of the problem through scientific research and exchange of information, with the aim of enhancing awareness of the problem.

My delegation has noted with satisfaction the growing support in the Committee for the idea of considering the subject of the outer-space environment within the framework of the Committee on the Peaceful Uses of Outer Space. At the same time, we note that there appears to be no agreement - at least at present - on the

(Mr. Noreen, Sweden)

specific proposal that Sweden, together with a number of other countries, has put forward to include the item of the outer-space environment on the agenda of the Scientific and Technical Sub-Committee.

We believe that the differences of view are not fundamental in character. To my delegation, the question appears to be not if the question should be discuss but, rather, when this important item should be discussed in the Scientific and Technical Sub-Committee, given the fact that a number of delegations that cannot support the proposal have said that it is "premature" to inscribe it on the agenda.

My delegation would therefore like to suggest that you, Mr. Chairman, initiate consultations during this session of the Committee with a view to exploring whether there is some ground for or possibility of reaching a compromise on this question, which is an important one, not only to my own delegation but to a number of other delegations as well, and to see whether we can come up with something - it is to be hoped before the end of this week.

ORGANIZATION OF WORK

The CHAIRMAN: I should now like to make some remarks on the organization of the Committee's work for the next few days so that delegations may prepare statements and be ready to participate. I shall call on the one or two remaining delegations that wish to speak on agenda items 5 and 7 to make statements at the beginning of this afternoon's meeting. As announced earlier, the Committee will then immediately turn to its consideration of agenda item 6. I would, however, urge delegations to use this afternoon's meeting to the fullest extent possible for statements on agenda item 6. I do so since very few delegations have as yet inscribed their names to do so, and it is my hope that we will make full use of the afternoon meeting for that agenda item.

(The Chairman)

I would then think that the Committee might be able to devote the morning meeting of Tuesday, 12 June, to agenda item 6, and that it would be in a position to conclude, sometime tomorrow, its consideration of that item and then turn to its consideration of the remaining agenda items, namely, 8 and 9, on Tuesday afternoon and Wednesday morning

The Chair hopes that sometime on Wednesday the Committee could then take up consideration of its report in informal meeting. As delegations will recall, consideration of the report is a time-consuming and sometimes delicate matter that may also sometimes involve the need for further consultations. It would therefore be my hope that by the Wednesday afternoon meeting at the latest we might be in a position to begin consideration of our draft report to the General Assembly.

That general framework may give an idea of how we might proceed with our work with a view to reaching a successful conclusion of this session, bearing in mind what delegations said this morning on various aspects with regard to agenda items 5 and 7.

The Committee will now hear a presentation by Mr. Russell Koffler of the United States National Oceanic and Atmospheric Administration on the development of satellite meteorology, in commemoration of the thirtieth anniversary of the launching of the first metereological satellite by the United States in 1960.

There followed a technical presentation.

The meeting rose at 11.55 a.m.

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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE THREE HUNDRED AND FORTY-FIFTH MEETING

Held at Headquarters, New York,
on Monday, 11 June 1990, at 3 p.m.

Chairman: Mr. JANKOWITSCH (Austria)

- Organization of work
- Report of the Scientific and Technical Sub-Committee on the work of it twenty-seventh session
- Implementation of the recommendations of the Second United Nations Conference
- Report of the Legal Sub-Committee on the work of its twenty-ninth session

This record is subject to correction.

Corrections should be submitted in one of the working languages, preferably in the same language as the text to which they refer. They should be set forth in a memorandum and also, if possible, incorporated in a copy of the record. They should be sent, within one week of the date of this document, to the Chief, Official Records Editing Section, Department of Conference Services, room DC2-750, 2 United Nations Plaza.

Any corrections to the records of the meetings of this session will be consolidated in a single corrigendum, to be issued shortly after the end of the session.

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The meeting was called to order at 3.20 p.m.

ORGANIZATION OF WORK

The CHAIRMAN: This afternoon we shall hear two more statements on agenda items 5 and 7, and then take up agenda item 6, to try to keep to the plan of work I submitted to the Committee this morning.

REPORT OF THE SCIENTIFIC AND TECHNICAL SUB-COMMITTEE ON THE WORK OF ITS TWENTY-SEVENTH SESSION (A/AC.105/456) (continued)

IMPLEMENTATION OF THE RECOMMENDATIONS OF THE SECOND UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE (continued)

Ms. COURTNEY (Australia): Mr. Chairman, at the outset I should like to express the pleasure of the delegation of Australia at seeing you again presiding over the work of the Committee on the Peaceful Uses of Outer Space. Your opening remarks were particularly insightful and provided excellent guidance for our current work.

I should like to make a few brief remarks with respect to item 5 of our agenda, the report of the Scientific and Technical Sub-Committee.

As delegations are aware, Mr. John Carver, the Chairman of that Sub-Committee, is an Australian, and we were therefore particularly gratified by the concrete results produced at its last session. I am sure he would wish to express his thanks to those delegations that have commended his efforts.

I shall limit my remarks to two areas that are relevant to the work of the Scientific and Technical Sub-Committee.

The first and obvious area is that of nuclear power sources. The welcome agreement in the Scientific and Technical Sub-Committee on the question of guidelines and criteria for safe use of nuclear power sources in outer space constituted a major breakthrough in this area. My delegation nevertheless agrees with other representatives that think that at this stage it is not appropriate to drop the item from the agenda of the Scientific and Technical Sub-Committee.

(Ms. Courtney, Australia)

The Working Group on Nuclear Power Sources should be reconvened in 1991. That being said, my delegation also believes that if the nuclear-power-sources question is concluded in 1991, then the logical item to replace it would be the question of space debris. Equally, if the question of space debris were to be subsumed under another, broader, item dealing with the space environment, that would be acceptable also, as long as a single item focused on the issue of space debris.

We were interested by your own remarks on this issue, Mr. Chairman, as we are by the extensive attention this question has been given by most members of the Committee on the Peaceful Uses of Outer Space in their statements. The remarks by the representative of Japan this morning to the effect that future sessions of the Scientific and Technical Sub-Committee should devote time to the exchange of information were therefore extremely encouraging. There is no doubt that the first step in the establishment of good management practices with respect to space debris is to ensure that the realities of the problem are well and widely understood.

As delegations are aware, Australia, along with a number of other countries, has been a proponent of bringing the issue of space debris to the attention and consideration of the international community. We acknowledge and greatly appreciate the centrality of the contribution of the United States in providing us all with statistical information on this subject.

Our concern about space debris has on several occasions been articulated before the Committee on the Peaceful Uses of Outer Space. We need not go into detail here. Suffice it to say that it is not a theoretical concern; objects being launched into space face an increasing danger from possible collisions with space debris. More often than not, this debris derives from militarily-oriented activities, ASAT tests or the destruction of sensitive surveillance satellites

(Ms. Courtney, Australia)

by the two major space users. Other major space users also contribute to the debris.

As a country that relies on the use of space technologies to assist our economic and social development, as do many other developed and, increasingly importantly, developing countries, the consequences of the profligate creation of space debris by current or previous space explorers and developers can only magnify. For example, we may in future have to consider the possible effects on the lifetimes of communication, earth observation and scientific satellites caused by the increase of space debris.

Current major space users cannot abnegate responsibility for the production of space debris. Therefore we do not consider it premature to start talking about this question under an appropriate agenda item when time permits. This issue affects us all, and it does affect us now. We should not make the mistake of leaving environmental issues off our multilateral agenda until it is too late. The environmental lessons of the past should not be repeated in the future.

In conclusion, we should like therefore to support the proposal made by the representative of Sweden that you, Mr. Chairman, conduct informal consultations on this question with a view to reaching consensus. To reiterate our view, it is that by 1992, if the item on nuclear power sources has been completed, an appropriate agenda item be added to the agenda of the Scientific and Technical Sub-Committee, which will initiate an exchange of views and recommendations on this question.

The CHAIRMAN: The next speaker is the representative of Costa Rica, upon whom I now call.

Mrs. CASTRO de BARISH (Costa Rica) (interpretation from Spanish): Before turning to the subject at hand, I should like to wish you, Sir, every success as Chairman of this Committee. Your proven experience here and your always constructive attitude give us all cause for confidence in you.

(Mrs. Castro de Barish,
Costa Rica)

It is a great pleasure to address the Committee at this session. We are doing so as observers, following the successful meeting in our capital of the Space Conference in the Americas on perspectives of co-operation in Latin America and the Caribbean. We spoke in the same capacity when the twenty-sixth session of the Scientific and Technical Sub-Committee was held precisely one week before the San José Conference.

(Mrs. Castro de Barish, Costa Rica)

The Space Conference of the Americas was held from 12 to 14 March this year. It was convened by our Government, under the auspices of the President of the Republic and with the financial support of the United Nations Development Programme (UNDP), through the Regional Bureau for Latin America, and the Caribbean, the United Nations Fund for Science and Technology for Development, the Special Unit for Technical Co-operation among Developing Countries (TCDC) and the Outer Space Affairs Division.

There were represented at the Conference 22 nations from the continent and 3 from outside. There were also representatives of 11 agencies, centres or special programmes from outside the region, the United Nations - through the Outer Space Affairs Division, UNDP and three of the specialized agencies - as well as 150 scientists and technologists from all over the American continent. The fact that more countries and agencies were not represented was owing to economic or administrative problems, in some cases, and in others to lack of time to accredit delegations. But all those countries or agencies that were unable to attend let us know in time, expressing their regret at missing such an event.

The Space Conference of the Americas forms part of a programme proposed by the Government of Costa Rica to UNDP. The proposal, which reflects the conclusions of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), is aimed at strengthening the space science and technology programmes of the countries of Latin America and the Caribbean, by promoting opportunities for co-operation, both between themselves and with countries and space agencies outside the region. The Conference was conceived as a vehicle by which countries could identify spheres and projects of common interest in five areas: basic space sciences, applied space sciences, space technology, education and legal aspects.

(Mrs. Castro de Barish, Costa Rica)

Those who promoted the project always believed that co-operation in those areas could be achieved without creating bodies or agencies at the continental level, which could, among other things, increase the heavy burden of public expenditure and an already unmanageable foreign debt. We were always aware that it would be best to identify viable projects that would not necessarily require the support of all the countries of the American continent, but that could be carried out jointly in areas or programmes of mutual interest by large or small groups of countries with the same aims, plans and resources.

As is made clear by the final report, which will soon be widely circulated, the Space Conference of the Americas was very successful, for a number of reasons. I shall state the seven that in our opinion are the most outstanding.

First, there was broad participation by delegations from countries in the area, specialized agencies of the United Nations system, scientists from the continent and outside it and space agencies from outside.

Secondly, there was very careful political and logistical preparation, which allowed us to avoid the obstacles that were foreseen when the conference was announced and which were dealt with by the preparatory body composed of four countries of the region.

The third reason was that a constructive spirit prevailed among the delegations of the accredited countries, making possible the adoption of a consensus Final Document reflecting the degree of agreement reached.

Fourthly, there was open and frank dialogue, not only between the official delegations of the American nations, but between them, the scientists and the members of space agencies both from the continent and from outside.

The fifth factor was the support and active participation of the United Nations, not only through its agencies for promoting development but also by the

(Mrs. Castro de Barish, Costa Rica)

Secretary-General, represented by the Outer Space Affairs Division.

Sixthly, a good number of projects were identified to establish fruitful co-operation between groups of countries and space agencies.

Seventhly, there was a declared desire to continue meeting in coming years.

Those attending the Conference spoke of those achievements in their statements and entrusted to the Government of Costa Rica - specifically to the Minister for Science and Technology - the task of following up the Conference and consolidating the information resulting from it on projects open to immediate co-operation by groups of countries.

I am pleased to tell the Committee that my Government has taken very seriously the tasks given to it by the official delegations. We are to act as a kind of temporary secretariat for subsequent meetings, including another conference to take place, as the Final Document says, in "not less than two years and not more than three".

The Costa Rican Minister for Science and Technology has taken the necessary steps to publish the Final Report of the Conference and to contract the services of one or two international consultants or experts, who will group the identified projects, define them more exactly and suggest possible sources of finance. He has also contacted the countries of Central America and Panama, which during the Conference had expressed their desire to create a subregional co-operative mechanism on the subject, within existing institutions for economic integration. All of this is being done with the resources of the Costa Rican Government and with the help of a sum of about $50,000 which the United Nations Fund for Science and Technology for Development made available for the purpose, at our request. To that must now be added $20,000 given by the Fund to improve the follow-up activities,

(Mrs. Castro de Barish, Costa Rica)

since, as the Minister for Science and Technology said in a recent letter, "we are very satisfied with the successful results of the Conference".

Like the other delegations present at the Conference in San José, we are convinced that we have taken an important step, strengthening the bonds between the countries of the American continent, and especially the countries of Latin America and the Caribbean, making it possible for scientists to exchange ideas between themselves and with the representatives of countries and clearly establishing the possibilities for co-operation and the carrying out of concrete projects. We believe that the number of such projects should be increased in the future, with a view to producing immediate benefits for the development of our countries through advances in the peaceful exploration of space. But we also believe that achieving those goals requires the participation of the United Nations, through not only its specialized agencies but also the Outer Space Affairs Division. The Space Conference to which I have referred so many times is an example of how the world Organization can effectively support the efforts of Member States.

The Government of Costa Rica wishes, through me, to express its appreciation to the United Nations agencies that supported us at all times in advancing the programme of co-operation in space sciences and applications in Latin America and the Caribbean. Without the understanding and determination of the highest officials of UNDP, and in particular of the regional Bureau for Latin America and the Caribbean, the United Nations Programme for Science and Technology for Development and TCDC, and without the constant help, almost unlimited, of the highest officials in the Outer Space Affairs Division, the plan could never have been put into effect.

(Mrs. Castro de Barish, Costa Rica)

We are preparing to celebrate International Space Year. It seems to the Costa Rican delegation that the best way for the developing countries to do that is by defining areas and programmes for North-South and South-South co-operation. We hope that the foundation laid in San José will yield benefits in three years or less.

The CHAIRMAN: We have thus concluded consideration of agenda items 5 and 7. There will have to be consultations between delegations on the final reflection of this part of the debate in the Committee's report to be submitted to the General Assembly. I therefore hope that delegations will engage in a process of informal consultations with a view to enabling us to find a common understanding on all the matters raised in the course of the debate.

REPORT OF THE LEGAL SUB-COMMITTEE ON THE WORK OF ITS TWENTY-NINTH SESSION (A/AC.105/457)

The CHAIRMAN: To open the debate on agenda item 6, I call on the first speaker, the representative of Czechoslovakia, in his capacity as Chairman of the Legal Sub-Committee.

Mr. MIKULKA (Czechoslovakia), Chairman of the Legal Sub-Committee (interpretation from French): The Legal Sub-Committee held its twenty-ninth session at the United Nations Office at Geneva from 2 to 20 April 1990, with the participation of representatives of 41 Member States, five specialized agencies and international organizations, that is, the International Atomic Energy Agency (IAEA), the International Telecommunication Union (ITU), the European Space Agency (ESA), the Council on International Co-operation in the Study and Utilization of Outer Space (INTERCOSMOS), and the International Astronautical Federation (IAF), as well as five observer States.

In accordance with paragraph 4 of General Assembly resolution 44/46 of 8 December 1989, the Sub-Committee's agenda included three substantive questions: elaboration of draft principles relevant to the use of nuclear power sources in outer space; matters relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union; and consideration of the legal aspects relating to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries.

(Mr. Mikulka, Chairman, Legal Sub-Committee)

As it had done at previous sessions, the Sub-Committee set aside some time during the first part of its session for a general exchange of views, after which it considered the three substantive agenda items in the order in which they were listed.

First, on the elaboration of draft principles relevant to the use of nuclear power sources in outer space, the Sub-Committee re-established its Working Group and agreed that Mr. Hans Winkler, the representative of Austria, should serve as its Chairman. The Sub-Committee began consideration of this item by taking note of the fact that the question of the use of nuclear power sources in outer space had been considered in the Scientific and Technical Sub-Committee at its twenty-seventh session, held in 1990, and that the relevant parts of its report were contained in document A/AC.105/456. The Sub-Committee also had before it a working paper submitted at its previous session by the delegation of Canada, document A/AC.105/C.2/L.154//Rev. 5, which dealt with all the principles, and a working paper submitted at its twenty-ninth session by the delegations of Canada, the Federal Republic of Germany and France, on principle 3, "Guidelines and criteria for safe use".

During the intense informal consultations on draft principle 3 on the basis of the document submitted by the three countries I have just mentioned, negotiations concluded with a new text, which was submitted to the Working Group as a proposal of the Chairman of the Working Group, Mr. Winkler, issued as document A/AC.105/C.2/L.178. The Working Group then unanimously adopted the text of draft principle 3, which is the keystone of all the principles.

Furthermore, the Working Group went through two readings of the provisions of the draft Principles on which there had not yet been any consensus, that is,

(Mr. Mikulka, Chairman, Legal Sub-Committee)

principles 2, 4, 8, 9 and 11. Before the end of the work of the twenty-ninth session of the Sub-Committee, the delegation of Canada presented the sixth revised version of working document A/AC.105/C.2/L.154, which the Sub-Committee agreed to annex to its report. The Working Group also accepted the Canadian suggestion for organizing an informal meeting of interested delegations in New York, during the first week of the session of the full Committee, in order to pave the way for new progress when the Sub-Committee holds its next session. That informal meeting took place, under the chairmanship of Mr. Helmut Freudenschuss of Austria last week.

The progress on all the principles relating to the use of nuclear power sources in outer space is encouraging and allows us to believe that the Sub-Committee could complete its work in this regard in the near future.

With regard to the next agenda item, entitled "Matters relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit ...", the Sub-Committee re-established the Working Group, open to all members of the Committee, and agreed that Mr. Estanislao Zawels, the representative of Argentina, should serve as its Chairman. The Working Group decided, in accordance with the recommendation of its Chairman, to consider each aspect of this item separately, that is to say, the definition and delimitation of outer space, on the one hand, and the geostationary orbit, on the other.

With regard to the definition and delimitation of outer space, several delegations reaffirmed the view that they had expressed at preceding sessions of the Sub-Committee. The debate showed that the position of States remained broadly divided, which prevented arriving at concrete results. The Sub-Committee was unable to agree on the question of whether, at its next session, in 1991, it might be possible to have a preliminary exchange of views on the problems posed, under

(Mr. Mikulka, Chairman, Legal Sub-Committee)

international law, by the expected use of aerospatial systems - problems which, according to the delegations that raised them, coul[a] be studied separately from the question of the delimitation of outer space.

In considering the question of the character and utilizlation of the geostationary orbit, the Sub-Committee noted that the Scientific and Technical Sub-Committee had considered that question at its twenty-seventh session, in 1990, and that the relevant passage was contained in its report on that session (A/AC.105/456, paras. 66 to 71).

(Mr. Mikulka, Chairman,
Legal Sub-Committee)

During the debate on the question of the geostationary orbit, the divergence of views evident at preceding sessions continued. Following the suggestion of its Chairman the Working Group held an exchange of views on the five general principles formulated in the "working non-paper", which was distributed at the earlier session of the Sub-Committee by a group of delegations, and which, according to some delegations, could be used in practice for considering the question of the geostationary orbit with a view to identifying new elements to be added to the five formulations already in the document. Two of those elements - paragraphs 4 and 5 - could not be studied owing to lack of time. None the less, when the other elements were debated, some delegations pointed out that, while they were prepared to exchange ideas on the elements contained in the "working non-paper", they did not think that a draft legal norms or principles in regard to the geostationary orbit was called for, and were not ready to engage in such drafting.

The third important agenda item dealt with the consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries.

The Sub-Committee had before it the replies received from Member States to a note verbale dated 26 September 1988, from the Secretary-General inviting them to submit their views as to the priority of specific subjects under this agenda item, and to provide information on their national legal framework, if any, relating to the development of the application of the principle contained in article 1 of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

(Mr. Mikulka, Chairman,
Legal Sub-Committee)

It also had before it the replies received to a note verbale dated 20 December 1989, to the States Members addressed by the Secretary-General of the United Nations inviting them to submit their views on the subject of international agreements that Member States had entered into relevant to that principle.

The Sub-Committee established a Working Group under this agenda item which was to commence its work at the Sub-Committee's next session, in 1991. The Sub-Committee subsequently elected Mr. Raimundo Gonzalez, the representative of Chile, as the Chairman of the Group.

The interesting debates which took place on this new agenda item within the Sub-Committee showed the hopes attached to the consideration of the principle as well as the difficulties. It will not be possible to pursue those hopes unless there is a concerted effort on the part of all States members of the Sub-Committee to work patiently together in a spirit of mutual understanding.

Before concluding, I should like briefly to speak to the organization of the work of the Sub-Committee. Although the rate of utilization of Conference Services by the Sub-Committee did improve during its last three or four sessions, there is still room for further improvement in this area. I am referring here in particular to the letter the former Chairman of the Sub-Committee addressed, on 31 January 1990, to the Under-Secretary-General for Conference Services and Special Assignments, which is set out in section B.1 of annex III to the report of the Sub-Committee (A/AC.105/457). At its twenty-ninth session the Sub-Committee drew particular attention to the rational utilization of conference services in light of the importance the General Assembly and the Committee on Conferences attached to the problem. The Sub-Committee decided to adopt for its current session the measures based on the aforementioned letter, which are listed in paragraphs 15 (a) through (g) of its report.

(Mr. Mikulka, Chairman, Legal Sub-Committee)

The Sub-Committee and its Working Groups attempted in particular to forecast informal consultations for which conference services were not utilized and to this end to cancel in advance some of their formal meetings. While in 1986 the Sub-Committee only used 42 per cent of conference services resources, in 1987, 57 per cent, in 1988, 59 per cent, and in 1989, 67 per cent, in 1990 - although the official figures had not yet been published - I was informed that the Sub-Committee had used 84 per cent of its resources set aside by conference services. The above considerations must not in any case give the impression that there is no room for further improving the efficiency with which the Legal Sub-Committee utilizes conference services, and for my part, I intend to spare no effort in reaching this objective.

Finally, as members can read in paragraph 18 of the report of the Sub-Committee, it took note of section III of General Assembly resolution 44/201 B of 21 December 1989, which concerned, inter alia, the question of the venue of the Sub-Committee's future sessions. The Sub-Committee was of the view that the provisions of the resolutions should be taken into account by the Committee on the Peaceful Uses of Outer Space, which is the comptent body to make recommendations concerning the programme of future work of the Legal Sub-Committee, including the dates and venues of its meetings.

Mr. MATUS (Chile) (interpretation from Spanish): As we said in our statement during the general exchange of views, the report of the Legal Sub-Committee should not only be approved; we should also point out the progress that has been made. I refer specifically to nuclear power sources and the agreement reached on principle 3, "Guidelines and criteria for safe use". We support this consensus and urge the Sub-Committee to continue its work on the remaining principles.

(Mr. Matus, Chile)

Accordingly, we support the suggestion of the Canadian delegation that unofficial consultations among interested delegations continue in order to have an exchange of views on working paper A/AC.105/C.2/L.154/Rev.6, on principles 2, 4, 8, 9, 11 and 12, which still remain to be defined.

As regards the sub-item on the question of the definition and delimitation of outer space and the character of the geostationary orbit, once again we would urge the parties concerned to show their good will so that in future real progress can be made in this area.

(Mr. Matus, Chile)

With that in mind, at the last meeting the Legal Sub-Committee our delegation proposed that the Secretariat be given a mandate to prepare a factual study, based on past reports and statements, of those areas in which consensus or majority agreement exist and those areas in which differing opinions remain unchanged. We believe that such an undertaking would not imply any judgement on the part of the Secretariat but would be merely descriptive in nature and that it would provide a good basis for further debate in the Sub-Committee. We would therefore formally request the Committee to entrust an analysis of that proposal to the Sub-Committee and consider requesting the Secretariat to implement it.

In addition, we would like to say that our delegation views as highly important the new topic of the Legal Sub-Committee, "Consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of the developing countries." The philosophy underlying that new agenda item is that the obligation to co-operate, which is very much a part of present-day international law on co-operation.

It may therefore be appropriate to make a few comments on international law as it relates to co-operation, since it is closely linked to international space law, the subject with which we are concerned.

A few years ago, one needed but to glance at the economic inequalities, the technological differences and the varying degrees of power of the world's States to realize that the principle of equality, as enshrined in Article 2 of the United Nations Charter, was nothing more than an illusion. That realization gave rise to the need to develop international law so as to turn our dreams into reality - something which, in turn, led to international law on co-operation, which was designed to transcend the concept of isolated States, to bring them together in

(Mr. Matus, Chile)

common undertakings and to prescribe positive obligations to action. Its ultimate goal was to create a more just interaction among the various protagonists in the international community.

In that context there can be no doubt that it is our task, inter alia, to implement the most basic elements of international law relating to co-operation. Among them are non-discrimination, universal applicability, which is now lacking reciprocity, and eradicating the existence of preferential treatment or positive discrimination. If we are successful, we shall have given effect to the principle of the sovereign equality of States, a concept with particular relevance to space law in light of its underlying principle: the common heritage of mankind.

Although it is clear that the new legal agenda item falls within the purview of new international law relative to co-operation, we feel it is of particular importance given the needs of the developing countries. The new agenda item highlights the political intention to redefine relations between the principal protagonists engaged in space activities on bases that respect the right of all the peoples of the world to share in the benefits derived from such activities.

In that connection we are issuing an appeal to concentrate our diplomatic action on the goal of establishing a minimal consistency between doctrinal framework and the emerging political realities of space technology.

Mr. NOWODWORSKI (Poland): Let me express the Polish delegation's satisfaction at seeing you, Mr. Chairman, presiding once more over the deliberations of the Committee on the Peaceful Uses of Outer Space. The Polish delegation is following the present session of the Committee with great interest. The Committee's agenda contains a number of items of considerable importance to the international community. We share the optimism you expressed in your opening remarks with regard to further and substantial progress in enhancing international co-operation in the field of the peaceful uses of outer space. We are particularly

(Mr. Nowodworski, Poland)

pleased that significant progress has been made this year in the work of the Scientific and Technical Sub-Committee and the Legal Sub-Committee.

I should like to make a few brief observations on the legal aspects of international co-operation in the field of outer space.

My delegation is pleased to be able to point out that the Legal Sub-Committee is continuing its successful work on the draft principles governing the use of nuclear power sources in outer space. We consider the most important achievement of its last session to be the adoption of the consensus text on "Guidelines and criteria for the safe use of nuclear power sources in space". That agreement creates conditions for narrowing the remaining differences in position on questions such as safety assessment, the responsibility of States and compensation, as well as on some aspects of the question of notification of the presence of a nuclear power source on board a space object. There is an urgent need to work out a set of principles that will ensure a necessary degree of safety in launching and operating space objects with nuclear power sources on board. We therefore expect a more tangible approach to those questions in future deliberations and we would suggest that the Legal Sub-Committee finalize its work on this item at its next session, if possible.

Closely connected with the use of nuclear power sources is another acute problem, namely, that of space debris, to which you, Mr. Chairman, also referred in your opening remarks. We share the concern you expressed. We think that the serious danger inherent in the unchecked growth of space debris needs urgent action with a view to minimizing the risks and improving the existing situation. Bearing in mind that the problem of space debris is of growing concern to the international community, we hope that the Legal Sub-Committee can also finalize its consideration of that subject in the very near future.

(Mr. Nowodworski, Poland)

With respect to other questions being considered by the Legal Sub-Committee, my delegation cannot, unfortunately, point to any progress on the question of the definition of outer space and the question of the character and utilization of the geostationary orbit.

(Mr. Nowodworski, Poland)

Concerning the first of those questions, my delegation would like to reiterate its support for the idea that outer space needs to be defined and delimited. The arguments in favour of establishing a clear boundary between two areas, air space and outer space, governed by two different legal régimes, are well known. Therefore, we feel that many States are favourably disposed to delimitation and are ready to continue to search for common ground. Generally speaking, the sooner delimitation takes place the better for legal security in outer space and for the avoidance of possible conflict situations.

As far as the legal character of the geostationary orbit is concerned, we take note of highly important initiatives capable of bringing early progress. We consider them useful in the search for a commonly acceptable solution. To my delegation it remains imperative that the geostationary orbit, as an integral part of outer space, must not be the subject of national appropriation or any other form of national claim or preferential rights. It should be used efficiently, economically and equitably in the interest of all States.

The present improved climate in international relations creates a promising outlook for success in the work of the Committee on the Peaceful Uses of Outer Space and its Sub-Committees with the aim of preserving outer space exclusively for peaceful purposes in accordance with the noble aims set out in the outer space Treaty.

Mr. FRITZSCHE (German Democratic Republic): Progress in the exploration of outer space, active space research by a growing number of States and the wider appliation of scientific and technological findings make it increasingly necessary to find regulations for a number of political and legal issues in accordance with the United Nations Charter and other generally accepted principles and norms of intergovernmental relations.

(Mr. Fritzsche, German Democratic Republic)

The Legal Sub-Committee is faced with that task and over the years has been able to make a valuable and constructive contribution to increasing legal security in the exploration and peaceful uses of outer space. From the very outset, those efforts have been designed to develop the rule of law as regards space activities and to preserve outer space for peaceful exploration and applications. Now and in the future the Legal Sub-Committee should remain committed to that pre-eminent objective.

On the whole, the work performed so far by the Legal Sub-Committee and the results achieved have furnished proof that it is possible to carry out the tasks the Legal Sub-Committee is faced with. That legal body has elaborated significant international legal instruments in the past. Recently, however, we have advanced rather slowly as regards the formulation of new, future-oriented legal principles. One reason for this is the conflicting interests that exist with regard to certain matters. On the other hand, we must not overlook the fact that the codification of detailed legal regulations for specific space activities constitutes a complex task that requires time and a broad consensus if it is to meet the challenges of the future.

In our view, it is possible to complete the drafting of principles governing the use of nuclear power sources in outer space in the foreseeable future. During its last session the Legal Sub-Committee reached consensus on principle 3, "Guidelines and criteria for safe use". That is one further step towards the adoption of a set of principles. We believe that the revised draft text submitted by Canada (A/AC.105/C.2/L.154/Rev.6) offers a good basis for solving the few remaining issues that are still outstanding. My delegation will join in efforts to complete this task.

(Mr. Fritzsche, German Democratic Republic)

As regards the rational and equitable use of the geostationary orbit and the definition and delimitation of outer space, it is indeed high time to look for ways and means to break the deadlock that has existed on this question for many years now.

My delegation has followed with great attention the debate on the new agenda item on the common benefit clause. We believe there is a need for result-oriented discussion of this broad topic. The point is to identify ways to expand co-operation and put it on an international legal foundation.

The CHAIRMAN: I call on the representative of the International Telecommunication Union.

Mr. ELOTU (International Telecommunication Union (ITU)): As members are well aware, one of the main responsibilities of the International Telecommunication Union (ITU) in the field of space communications concerns the establishment of regulations regarding the use of the geostationary satellite orbit as provided for in article 33 of the ITU Convention of 1982 and, little changed, in article 29 of the 1989 Nice Constitution. Such regulations are established by World Administrative Radio Conferences. As I reported to this Committee last year, the major event in this connection was the second session of the World Administrative Radio Conference on the use of the geostationary orbit and the planning of space services utilizing it, which was held in Geneva between 29 August and 5 October 1988.

In the revision of the Radio Regulations that was adopted, the guarantee in practice of equitable access to the geostationary satellite orbit - the basis of the Conference - was given more concrete expression. In other words, one orbital location within a predetermined arc for use with the frequency bands identified for allotment planning has been designated for the coverage of each country. In that

(Mr. Elotu, ITU)

respect, the allotment plan with its associated regulatory provisions was undoubtedly a major achievement. The allotment plan came into force in March this year. That plan sought to find a balance among diverse requirements such as, for example, flexibility and long-term assurance of access. Similarly, procedures were revised to provide for multilateral planning meetings. This, with the relevant resolution providing for the Administrative Council to monitor the application of the decisions of the meetings, was another step forward.

(Mr. Elotu, ITU)

On the basis of experience gained with their application in practice, and taking advantage of the galloping advances in space technology, the approaches adopted in 1988 will certainly be refined in the coming years.

Article 29 of the new Constitution adopted in Nice in 1989, to which I have already referred, which deals with the use of the radio frequency spectrum and the geostationary satellite orbit, states:

"1. Members shall endeavour to limit the number of frequencies and the spectrum used to the minimum essential to provide in a satisfactory manner the necessary services. To that end they shall endeavour to apply the latest technical advances as soon as possible.

"2. In using frequency bands for radio services, members shall bear in mind that radio-frequencies and the geostationary satellite orbit are limited natural resources and that they must be used rationally, efficiently and economically in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to both, taking into account the special needs of the developing countries and the geographical situation of particular countries."

It is evident that a collaborative approach by all nations in the use of these two limited resources is essential in meeting the requirements of that article.

The ITU participated in the work of the Legal Sub-Committee of this Committee and will continue to make available its services to that Sub-Committee in every way possible.

In conclusion, Mr. Chairman, I wish to thank you for giving me an opportunity to address the Committee. The ITU will, as is required of it, continue to participate actively in the work of the Committee and its Sub-Committees as well as in the related ad hoc inter-agency meetings.

The meeting rose at 4.25 p.m.